

NOTE ON THE GENERA OF PETROMYZONTIDÆ.

By DAVID S. JORDAN and CHARLES H. GILBERT.

In the Proceedings of the National Museum for 1882, p. 521, is a review of the genera of Lampreys, by Dr. Gill. In the analysis of the genera several characters not hitherto recognized have been noticed, and the paper is a substantial addition to our knowledge of these animals. The characters drawn from the dentition of the supraoral lamina are, however, unreliable for the distinction of genera. Thus in *Petromyzon* and *Ammocætes* this lamina is said to be bicuspid, while in *Ichthyomyzon* and *Entosphenus* it is described as tricuspid. In *Petromyzon* and *Entosphenus*, so far as we have noticed, the description given by Professor Gill fully applies. In *Ichthyomyzon* the supraoral lamina is bicuspid in the common species, *I. argenteus*, but tricuspid in *I. castaneus* and *I. hirudo*, species not generically distinct from *I. argenteus*, and whose specific validity, indeed, may be questioned. *Ammocætes* usually has a broad supraoral lamina, with a tooth at each end, but very often, at least in our common species *A. niger*, there is also a median cusp, as in *Entosphenus*. We have no doubt that *Ammocætes* (as understood by Dr. Gill) should be generically separated from *Petromyzon*. The characters of *Ichthyomyzon* and of *Entosphenus* are, however, of less importance. The teeth of *Ichthyomyzon* are all essentially as in *Petromyzon*, but proportionately smaller, weaker, and with less developed points and serræ. The same is nearly true of the teeth of *Ammocætes* in comparison with those of *Entosphenus*. *Petromyzon* and *Entosphenus* are large marine species, ascending fresh waters only to spawn (or occasionally land-locked), while *Ichthyomyzon* and *Ammocætes* are their respective fresh-water representatives, smaller, weaker, and less specialized. Convenience is probably best served by recognizing all four groups as genera.

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DESCRIPTION OF A NEW MURENOID EEL (*SIDERA CHLEVASTES*) FROM THE GALAPAGOS ISLANDS.

By DAVID S. JORDAN and CHARLES H. GILBERT.

Sidera chlevastes sp. nov. (20385).

Body little elongate, strongly compressed. Head rather small, somewhat compressed. Teeth rather strong, most of them slender and sharp; their edges entire. Teeth of lower jaw uniserial, directed strongly backwards, close set, slightly increasing in size posteriorly; about 14 on each side.

Teeth of upper jaw biserial, for most of its length; the teeth of the

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inner series longer and depressible, longer than teeth of lower jaw. Vomer with a long, slender, median canine.

Anterior nostril in a moderate tube; posterior without tube, above front of eye. Mouth capable of being completely closed. Tip of lower jaw included. Eye rather large, placed midway between tip of snout and angle of mouth, its length about half that of snout; cleft of mouth about half length of head.

Dorsal fin rather high, beginning well in front of gill opening. Head $2\frac{2}{3}$ in trunk. Head and trunk a little shorter than tail.

Color rather light yellowish brown, with about 20 blackish rings, which are usually about three times the breadth of the interspaces; these rings are somewhat irregular, broadest above, becoming narrow below. They extend over the fins, and are very rarely confluent with each other. Tip of tail black. Head with $3\frac{1}{2}$ rings, which do not meet below. Tip of snout in one ring, the top and front of snout on median line pale.

The typical specimen, 9 inches in length (20385 U. S. Nat. Mus.), was obtained at the Galapagos Islands by Captain Herendeen.

We here use the name *Sidera* for those species of *Muraena* which have the posterior nostrils without tubes and the teeth all sharp. It is, therefore, equivalent to the subgenus *Gymnothorax* of Günther, but as the proper type of *Gymnothorax* Bloch is *Muraena helena* L., the name should not be used for this division.

The species of *Sidera* known from the Pacific coast of America may be thus compared :

- a. Dorsal beginning considerably before gill-opening.
- b. Body with many broad, blackish rings; teeth entire, those of upper jaw mostly biserial; of lower, uniserial; body strongly compressed. . . . CHLEVASTES.
- bb. Body without dark bands or rings; teeth mostly uniserial; body not strongly compressed.
- c. Body and fins closely covered with irregular pale spots, around which the dark color forms reticulations; dorsal and anal edged with black; angle of mouth black; larger teeth serrated on posterior margin; head $1\frac{1}{2}$ in trunk. OCELLATA.*
- cc. Body with small yellowish spots; nasal tubes short; teeth entire. . . . DOVII.†
- ccc. Body without distinct pale spots or bands.

* *Gymnothorax ocellatus* Agassiz, Spix, Pisc. Bras., 1828, 91. West Indies, Gulf of Mexico, Brazil, Panama ? (Günther) (not seen by us on Pacific coast).

† ? *Muraena lorii* Günther, Cat. Fish. Brit. Mus., viii, 103, 1870; *Muraena pintita* Jordan & Gilbert, Proc. U. S. Nat. Mus., 1881, 346. Mazatlan (Gilbert); Espiritu Santo Island (Belding); Panama (Günther); Galapagos Islands (Herendeen). Two or three species may perhaps be here confounded, but more probably the markings are very variable.

- d. Dorsal fin without distinct light or dark margin; head more than one-third trunk; teeth entire.
- e. Body dark brown, vaguely reticulated with narrow pale streaks and spots; belly with crosswise streaks of dark; a dark line on each side of base of anal, with short cross-branches; a black blotch on gill-opening; teeth strong.....MORDAX.*
- ee. Body uniform chestnut-brown; no dark spot at gill-opening; sides of mandible with about 18 teeth; body rather stout.....CASTANEA.†
- dd. Dorsal fin with a black margin, its edge narrowly white; anal white-edged; head less than one-third trunk; sides of mandible with about 13 teeth; body slender; size small (?)......VERRILL.‡
- aa. Dorsal not beginning before gill-opening; teeth mostly biserial.
- f. Color plain brown; dorsal beginning nearly over gill-opening; inner teeth of sides of upper jaw long, slender, close-set; anterior teeth strong, serrate behind; mouth short; about 20 teeth on each side of lower jaw; size small (?)......PANAMENSIS.§
- ff. Color blackish, with rather distant yellow spots, confluent on the throat; dorsal beginning at end of first third of body (?). Fresh waters (exclusively ?).....AQUÆ-DULCIS.||

INDIANA UNIVERSITY, July 11, 1883.

DESCRIPTION OF A NEW SPECIES OF RHINOBATUS (RHINOBATUS GLAUCOSTIGMA) FROM MAZATLAN, MEXICO.

By **DAVID S. JORDAN** and **CHARLES H. GILBERT**.

Rhinobatus glaucostigma sp. nov.

Rhinobatus productus Streets, Bull. U. S. Nat. Mus., vii, 1877, 55. (Excl. Syn.; not of Ayres. San Bartholomé Bay, Lower California.)

Rhinobatus leucorhynchus Jordan & Gilbert, Bull. U. S. Fish Comm., 1882, 105. (Mazatlan; no descr.; not of Günther.)

Allied to the California species (*Rhinobatus productus* Ayres), and to the Panama species (*Rhinobatus leucorhynchus* Günther), but with the snout shorter than in either and the coloration different.

Disk comparatively long and narrow, the snout produced, but not acutely pointed, the anterior margins being very nearly straight. Greatest width of disk slightly less than its length to end of base of pectorals; length of snout from eye $2\frac{1}{2}$ in length of disk; interorbital width $3\frac{1}{2}$ in snout, a little less than length of eye and spiracle. Spiracle large, rather smaller than eye, with two conspicuous folds on its posterior border. Width of body opposite posterior part of base of ventrals, a little less

* *Muræna mordax* Ayres, Proc. Cal. Acad. Nat. Sci., 1859, 30. Point Conception to Cerros Island.

† *Sidera castanea* Jor. & Gilb., Proc. U. S. Nat. Mus., 1883. Mazatlan (Gilbert).

‡ *Sidera verrilli* Jor. & Gilb., Proc. U. S. Nat. Mus., 1882. Panama (Bradley).

§ *Muræna panamensis* Steindachner, Ichth. Beitr., v, 1876, 19. Panama (Steind.); Pearl Islands (Bradley).

|| *Muræna aquæ-dulcis*, Hayden's Rept. Geol. Surv. Montana for 1871, 474, 1872. Rio Grande at San José de Costa Rica (Cope). This species is unknown to us.